

Incident Report



Incident No.	25196	Incident Location	Seal Rocks Road, Pacific Palms
Incident Date	2 nd Sept 2013	Description of Incident	Unexpected high voltage energisation of a conductor during work under access permit conditions resulting in an electrical worker receiving fatal injuries.
Date of Report 15/10/2013	Lead Investigator	Keith Spencer	
	Incident Manager	Gary Humphreys	

Description of event:

On Monday 2 September 2013 at approximately 10:25 am, Trevor Tooze, an Essential Energy electrical worker working as part of a six person work crew (**Work Crew**), received an electric shock from unexpected high voltage energisation while lowering a redundant 11Kv conductor at Seal Rocks Road, Pacific Palms. Essential Energy employees and emergency services workers were unable to revive Trevor and he was pronounced deceased at the scene by paramedics.

Extent of Impact:

Fatal injury to Essential Energy employee, Trevor Tooze.

Summary of Factual Findings:

- During 2010 a 11Kv nuclec recloser, located at Pole No. 97051551, Seal Rocks Road, Pacific Palms, was identified as defective and required replacing.
- A more suitable location for the recloser was identified at Pole No. 97051585 by the Design section of Essential Energy. The scoping of the relocation of the recloser also identified the need to remove approximately 2.3 kilometres of 11000 volt 7/0.080 bottom circuit copper conductors across fourteen spans between Pole No's. 97051582 and 97053804.
- The Design section prepared a Work Pack for the relocation of the existing 11kV nuclec recloser (which included the proposed removal of the conductor) and during July 2013, the Work Pack was forwarded to the Bulahdelah depot Resource Supervisor.
- The Bulahdelah Resource Supervisor arranged for the Depot's Live Line Crew to attend the Seal Rocks Road site and scope the work. Subsequently, on 28 August 2013, three members of the Bulahdelah Live Line Crew disconnected and removed bonds at Pole No 97051582 and Pole No 97053804 resulting in the de-energisation of the lower 11Kv bottom circuit between those spans.
- On 2 September 2013, the Work Crew consisting of six Essential Energy employees, met at the Seal Rocks Road site at approximately 8.00am.

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- At 8.15am, the designated Worksite Controller contacted Network Control to commence Switching Sheet No. J-18602-C and received block instructions to check open bonds, apply danger tags, prove de-energised and apply Access Permit earths at both locations. Testing and prove de-energised tasks were carried out, Access Permit earths applied, and danger tags applied.
- The Worksite Controller issued Access Permit No. 25965-C and recorded under the heading 'Special Conditions/Precautions' '11Kv circuit above is alive'.
- The Work Crew also held a toolbox discussion and discussed the method of completing the work. It was agreed that five spans of wire would be removed due to only a single drum wire winder being available at the site on the day. These spans were between Pole Nos 97051582 and 97051588. The Work Crew split into two teams; Team 1 consisting of three members to commence work from Pole No 97051584; and Team 2 also consisting of three members to commence work from Pole No 97051588.
- At approximately 9:17am, the Worksite Controller contacted Network Control and advised that both HV bonds were checked opened and that the lower circuit between Pole No 97051582 and 97053804 had been tested, proved de-energised, earthed and danger tagged. Network Control confirmed the issue of the Access Permit at 9.18am and this was verified by another member of the Work Crew signing the Access Permit as the recipient. The other members of the Work Crew signed the Access Permit, acknowledging that they had received instructions to carry out the work referred to in the Access Permit and that they were satisfied that they will have no difficulty in keeping clear of live mains and apparatus.
- Each team completed a Worksite Hazard Identification, Risk Assessment and Control (HIRAC) process form. During discussions, the hazard of 11Kv energised conductors above was emphasised to all members of the Work Crew a number of times by the Worksite Controller. This hazard was also noted on Team 1's HIRAC form with the control measure identified as 'apply earths and lower the wires to ground'.
- Team 1, after lowering conductors and removing the crossarm from Pole No 97051584, moved to Pole No 97051585 and lowered these conductors and removed the crossarm.
- Team 2, at pole number 97051588, lowered each of the three conductors to approximately mid pole and, using a manual winch ('lug-alls' and 'dead-ends'), secured the three conductors by adjusting the manual winch to hold the tension of the wires.
- Team 2 then moved to Pole No 97051587, untied the conductors and then removed the pins for the roadside mains to be lowered. Member 'A' of Team 2 maintained control of the copper conductor while member 'B' of Team 2, operating the EWP controls, lowered the EWP bucket to a position approximately head height from the ground. On the ground, Trevor was positioned as a safety observer and also acted as a receiver of the lowered copper conductor. Diagram 1 illustrates the worksite area.

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- Member A handed the conductor to Trevor, who took hold of the wire in his right hand and shortly after, Member A saw Trevor, while still holding the wire, fall to the ground.
- Member B saw Trevor fall to the ground and recognised that he was receiving an electric shock.
- At approximately the same time, Member B jumped from the EWP and ran to his truck and raised the alarm by calling 000. Member A slewed the bucket, jumped out of the EWP and ran to where Trevor was now lying on the ground.
- Around this time, members of Team 1 heard a noise which they recognised as the conductors livening up and shortly after they heard someone from Team 2 shouting out that Trevor had been 'hit'.
- The Worksite Controller called Network Control and confirmed that the feeder above the circuit being removed had tripped off. The other two members of Team 1 drove down to Pole No. 97051587 where they observed Trevor lying on the ground.
- Members of both teams began administering CPR while one member of the team remained talking on the phone to the ambulance emergency service who were providing CPR instructions.
- The Work Crew continued CPR for approximately 30-35 mins until the ambulance arrived.
- When an ambulance arrived, the Paramedics took over, placed defibrillators on Trevor, and continued administering CPR for approximately 30 minutes.
- Trevor failed to respond and was pronounced deceased by the paramedics.
- A Safety Alert 58-13 was issued on 2 September 2013 instructing that, as a precautionary measure, all conductor retensioning, restringing or removal is not permitted on multiple circuit construction unless all circuits are de-energised.

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Diagram 1: Sketch of the pole configuration:

Team 2: Work area - lower conductors and apply manual winch (lug-all) to mid-Pole No 97051588, and lower road side conductor Pole No 97051587

Team 1- Work area- remove crossarms and lower conductors on Poles No. 97051584 and 97051585

